

### **ABSTRACT OF THE DISCLOSURE**

Memory modules based on DDR-DRAMs are provided with a buffer and error checking module, which integrates an error data memory and a buffer/redriver functionality for conditioning data signals that are transferred to the memory module and output from the memory module and is suitable for the correction of useful data stored erroneously in the DDR-DRAMs. The buffer and error checking module enables the integration of both error correction and buffer/redriver functionality on memory modules within the restricted memory module dimensions in accordance with definitive industry standards, simplified or improved routing of data lines and of control and address lines and also, by virtue of a reduction of erroneously transferred data to the data memory system, an increased real data transfer rate.

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